

CMX-4300-32/-64/-128

VAX 4000 Model 300

MEMORY MODULES

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1.0 SCOPE

TABLE OF CONTENTS

1.0 Scope

1.1 General Description

1.2 Configuration Guidelines

1.3 Specifications

2.0 Installation

2.1 Unpacking and Inspection

2.2 Pre-Installation System Test

2.3 Installation into the Memory Backplane

2.4 Post-Installation Procedures

A. KA670 Console Diagnostics

B. MicroVAX Diagnostic Monitor (MDM)

C. VAX/VMS Procedures

2.5 Product Return Procedure

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1.3 SPECIFICATIONS

Physical

Model:	CMX-4300-32, 64, 128
Capacity:	CMX-4300-32: 32 Mbytes per module CMX-4300-64: 64 Mbytes per module CMX-4300-128: 128 Mbytes per module

Compatibility

Hardware:	IA870 CPU, BA440 backplane
Software:	IA870 onboard diagnostics, MINIBOOT, Management
Organization:	Diagnoses, and all VAX operating systems CMX-4300-32: 8192K x 89 pins (7 ECC) CMX-4300-64: 16384K x 39 pins (7 ECC) CMX-4300-128: 32768K x 39 pins (7 ECC)
Device Type:	CMX-4300-32: 1024K x 1 CMOS ROM CMX-4300-64: 4096K x 1 CMOS ROM CMX-4300-128: 8096K x 1 CMOS ROM

Read Cycle:	65 nanoseconds*
Write Cycle:	75 nanoseconds*

*Read and Write cycles are tested at 100 MHz. Actual performance may vary depending on system configuration and operating conditions.

Power

Requirements:	CMX-4300-32: 2.6A CMX-4300-64: 2.2A CMX-4300-128: 3.4A
Box Loads:	AC 0.0, DC 0.0

Environmental

Temperature:	Operating: 0°C to 55°C Storage: -40°C to 85°C
Humidity:	10% to 90% non-condensing

2.0 INSTALLATION

This section provides the information necessary to install the CMX-4300 memory module into the VAX 4000 Model 300 computer system.

2.1 UNPACKING AND INSPECTION

- The memory is shipped in a special carton to withstand shock and rough handling normally incurred during commercial transit. Carefully examine all packaging material and the memory board to determine if any damage has occurred. If damage is noticed, immediately notify the claims department of the transportation company to file a claim.

2.2 PRE-INSTALLATION SYSTEM TEST

- It is recommended that **system tests be run before and after installing** the CMX-4300 module in order to verify proper operation of both the host system and the memory installation.
- Before installing the CMX-4300 module, run the power-on system tests and, if possible, the MicroVAX Maintenance Diagnostics. We suggest that you print out a hard copy of any error reports. The computer system was delivered with a TK50 tape cartridge which contains the diagnostics for fully testing the VAX 4000 Model 300 computer and its devices. Refer to DEC documentation for additional information.

2.3 INSTALLATION INTO THE BA440 BACKPLANE

Use the following procedure to install the CMX-4300 into the VAX 4000 Model 300 BA440 memory backplane:

- ① **Observe proper anti-static procedures.** **Shutdown** the operating system and **turn off the power** to the computer. Unlock and open the front door of the computer exposing the BA440 backplane. **Disconnect any network and DSSI disk cables** from the CPU/memory access panel. **Release the two quarter-turn latches** on the CPU/memory access panel using a phillips screwdriver (see *Figure 1*). One latch is located at the top of the panel and the other is at the bottom. Swing open the panel to the left exposing the memory backplane.

CONSTITUTION

The following are the principles of the Constitution of the United States of America.

ARTICLE I

Section 1. All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

ARTICLE II

Section 1. The executive Power shall be vested in a President of the United States of America.

Section 2. The President shall hold Office for four Years; and, except as provided in the second Sentence, shall be eligible for one Term only.

ARTICLE III

Section 1. The judicial Power shall be vested in one Supreme Court, and in such inferior Courts as the Congress may from time to time ordain and establish.

Section 2. The Judges, both of the Supreme and inferior Courts, shall hold their Offices during good Behaviour; and, after the Manner and Form of the Oath of Office, shall take the following Oath or Affirmation: "I, _____, do solemnly swear (or affirm) that I will faithfully execute the Office of Judge of the said Court, and will support the Constitution of the United States."

Section 3. The Congress shall have Power to make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States.

Section 4. The Congress shall have Power to remove any Judge of the Supreme or inferior Courts, who shall be convicted of Treason, Bribery, or other high Crimes and Misdemeanors.

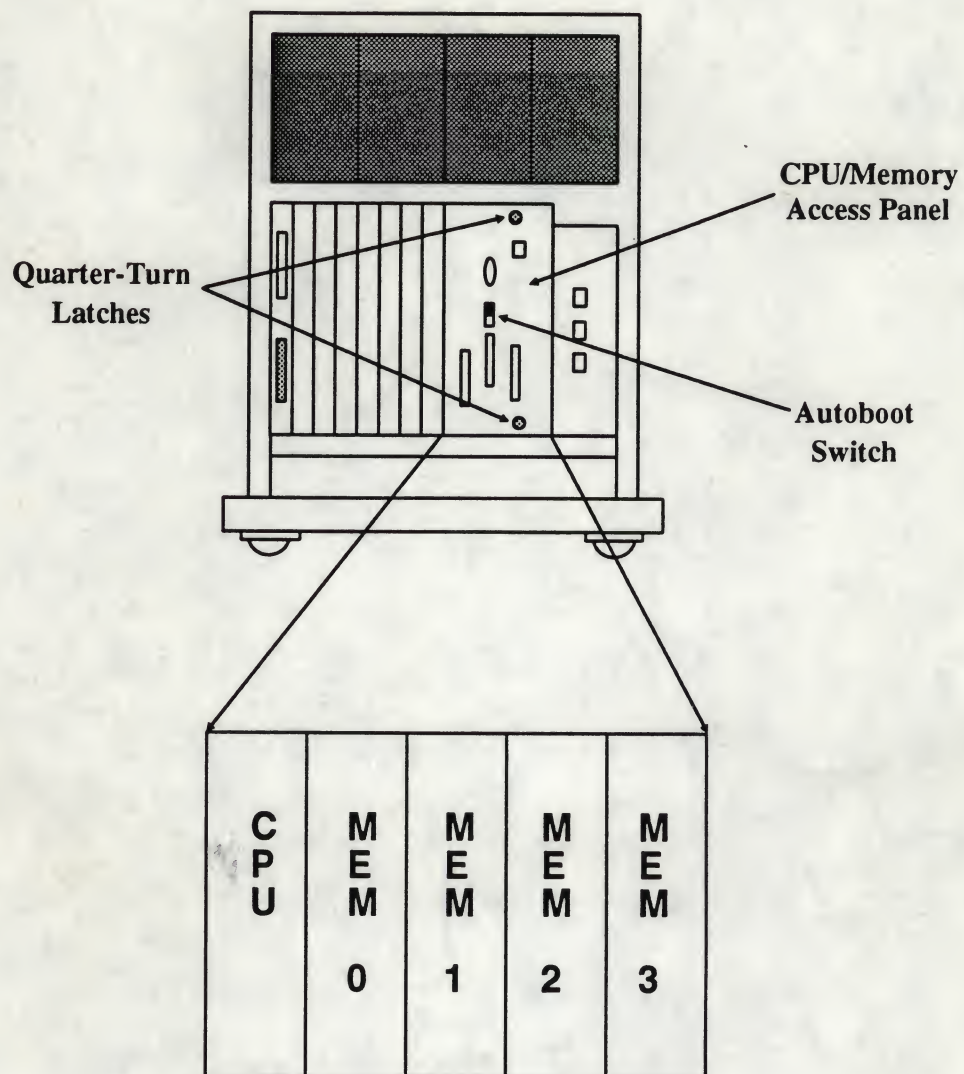


Figure 1. CPU/Memory Backplane Access

1. 100
 2. 100



10	10	10	10	10	10
10	10	10	10	10	10
10	10	10	10	10	10
10	10	10	10	10	10
10	10	10	10	10	10
10	10	10	10	10	10

1. 100
 2. 100

- ② Grasp the CMX-4300 module by the top and bottom ejector handles. The module should be oriented so that the Camintonn logo and the 150-pin connector plug are on the right side. Slide the module into the first free memory slot. Slots are filled from left to right with no gaps allowed between modules (refer to *Figure 1*. and Configuration Guidelines in section 2.1). Carefully engage the ejectors in the appropriate notches at the top and bottom of the slot. Place the palm of your hand at the center of the module handle and push the module forward until it is fully inserted and centered in the slot. Do not apply excessive pressure; if the module will not insert easily, check that the module is correctly oriented and that the ejectors are properly engaged. Forcing the module could damage the module and your backplane. When the module is fully inserted and centered in the slot, lock the ejectors in place so that the module is tightly secured.
- ③ Swing shut the CPU/memory panel and tighten the latches. Reconnect any network and DSSI cables removed in step 1. Proceed to section 2.4 for post-installation testing.

2.4 POST-INSTALLATION PROCEDURES

To verify installation and ensure proper operation of the CMX-4300, the following post-installation procedures should be performed:

A. KA670 Console Diagnostics

- ① Set the CPU autoboot slide switch to the upper position (see *Figure 1*). Power on the computer and observe the self-tests from the system console. All tests should run to completion with no errors.
- ② Verify that the system sees the new memory and that no bad memory was detected. At the system console enter the following command:

>>> SHOW MEMORY

You should see a display indicating total memory size, the size of each memory module, and a count of bad pages. For example, a system containing a Camintonn CMX-4300-128 module and a DEC MS670-BA 32 MByte module should display the following (the display may differ depending on CPU version):

Memory 0: 00000000 to 07FFFFFF, 128MB, 0 bad pages
Memory 1: 08000000 to 09FFFFFF, 32MB, 0 bad pages
Total of 160MB, 0 bad pages, 176 reserved pages

- ③ Run the memory acceptance tests. At the system console prompt enter

>>> **T A8**

A series of test numbers will be displayed. No errors should occur.

To run the memory acceptance tests continuously, enter:

>>> **R T A8**

The memory tests will execute indefinitely. To stop the tests, press **Control-C (^C)**. It may take a few seconds before the tests stop and the prompt is shown.

B. MicroVAX Diagnostic Monitor (MDM)

- ① Boot the Customer Diagnostic supplied on the TK50 cartridge received with your VAX 4000 Model 300 :

>>> **B MUA0**

- ② Follow the instructions on the console to get to the main menu. At the main menu, select option 1 "Test the System". The diagnostic will first test all devices individually and then run an exerciser to test all devices simultaneously. The device tests should all pass (except for those failures noted during the pre-installation tests) and you should receive a success message at the end of the exerciser. **(Note:** Some third party devices do not support MDM and will fail this test).
- ③ If all tests pass, restore the CPU autoboot slide switch to its original position, close the BA440 front door, and reboot the operating system.

C. VAX/VMS Procedures

- ① In order to take full advantage of the newly installed memory, VAX/VMS system tuning may be necessary. At a minimum the AUTOGEN procedure should be run to expand system resources such as process slots, page files, and the system dump file. Further tuning can be performed by editing SYS\$SYSTEM:MODPARAMS.DAT and by manually setting system parameters with the SYSGEN utility. Refer to the appropriate VAX/VMS system manager reference manuals for detailed system tuning information.

After VAX/VMS system has been performed or if you are experiencing a problem, you may want to run the VAX/VMS User Environment Test Procedure (UETP) to further verify correct operation of the new environment.

2) Select all users to log off the system. Log into the SYSTEST environment and run the UETP command procedure (UETP). Follow the instructions. The UETP program is in most environments for system testing. It is a fairly large number of tests to run as much memory as possible. However, do not exceed the number of available slots or slots. If the UETP will fail due to lack of system resources, the UETP command will list the number of available slots or slots. If the UETP will fail due to lack of system resources, the UETP command will list the number of available slots or slots. If the UETP will fail due to lack of system resources, the UETP command will list the number of available slots or slots.

3) If the UETP has failed, you will check for memory errors with the DCL command SHOW ERROR. Additional UETP information is available in the VAX/VMS User Environment Test Procedure (UETP) manual.

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